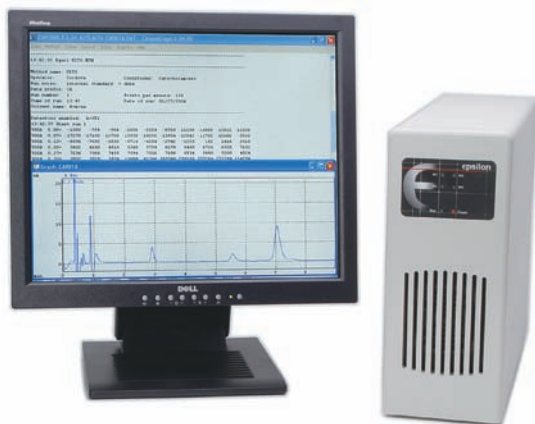


# LC epsilon™ Electrochemical Detector

The LC epsilon (e5) is the latest in the line of electrochemical detectors that BASi initiated over 30 years ago. It is a fully computer-controlled detector specifically designed for the requirements of electrochemical detection in liquid chromatography. It controls and monitors a thin-layer flow cell attached to chromatographic columns ranging from microbore to standard bore (0.32 - 4.6 mm ID) formats. It is optimized for high current sensitivity and low noise by including important design features such as extensive filtering, optical isolation between the digital and analog components, and particular circuit layout and electronic component selection. Users have great flexibility in choosing a configuration to meet their needs with 1-, 2-, and 4-channel versions available. It can perform constant potential amperometric detection, pulsed amperometric detection (PAD), and can acquire data from external devices. Included is ChromGraph® software, a sophisticated set of programs for control of the LC epsilon and the acquisition and analysis of data generated by the liquid chromatography system. The software runs in the Windows® environment, providing all the flexibility and multi-tasking inherent in this operating system.

## Features

- 1-, 2-, or 4-channel electrochemical detection (EC) available
- Pulsed amperometric detection (PAD)
- ChromGraph® control, data acquisition, and analysis software
- Provision for inputs from two external LC detectors
- Optically isolated circuitry for noise reduction
- Both analog and digital filtering for maximum noise reduction
- 100 pA to 5 mA gain ranges
- 20-bit data resolution
- 1- and 2-channel instruments can be easily upgraded to 2 or 4-channels



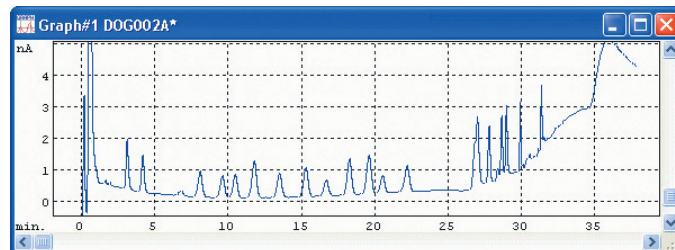
## Data Channel Configurations

- One Channel: 1 EC or 1 PAD or 1 external
- Two Channel: 2 EC or 1 EC & 1 external or 2 externals or 1 PAD
- Four Channel: 4 EC or 3 EC & 1 external or 2 EC & 2 externals or 1 PAD
- 

## BASi ChromGraph Software

ChromGraph comes as two sister programs, ChromGraph Control and ChromGraph Report. Control sets the instrument parameters and oversees the collection and storage of data. Report processes the data after it has been collected. The two programs can run independently or can be configured so Control automatically passes the data to Report for immediate processing.

ChromGraph software has undergone extensive performance verification using NIST-traceable signals. No version is released until it passes our stringent criteria for precision, accuracy, and linearity.



## ChromGraph Report Features

- Choice of auto- or fixed-scale graphics
- Unlimited queuing for automatic operation
- Easy export to spreadsheets
- Automatic optimization of peak-detection parameters
- Math operations allow baselines to be offset, added, or subtracted
- Automatic updating of up to 10-level standards file
- Automatic importing of sample-identifying information

## e5 Specifications

### Data Acquisition for All Channels

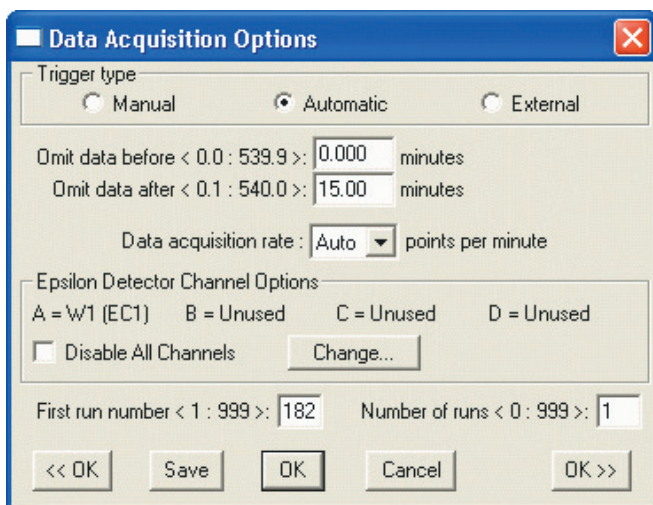
Resolution: 20 bit data  
Data acquisition speed: 75, 150, 300, 600, 1200 points per minute

### Potentiostat

Applied Potential:  $0 \pm 2.55$  V for EC Channels  
Potential resolution: 10 mV  
Compliance Voltage:  $\pm 12$  V

### Current-to-Voltage Converter

Current Ranges Channels W1 and W2: 24 ranges: 0.1, 0.2, 0.5, 1.0, 2.0, 5.0, 10, 20, 50, 100, 200, 500 nA/V and 1, 2, 5, 10, 20, 50, 100, 200, 500  $\mu$ A/V and 1, 2, 5 mA/V  
Current Ranges Channels W3 and W4: 13 ranges: 0.1, 0.2, 0.5, 1.0, 2.0, 5.0, 10, 20, 50, 100, 200, 500 nA/V and 1  $\mu$ A/V  
Maximum Current: Channels W1 and W2: 5 mA  
Maximum Current: Channels W3 and W4: 1  $\mu$ A  
Filtering applied to EC Channels and External Channels  
Digital Filter, 12 settings: 0.04, 0.05, 0.06, 0.08, 0.1, 0.15, 0.2, 0.3, 0.4, 0.5, 0.8, 1.0 Hz, none



## ChromGraph Control Features

- Four channels of data collection
- Control of BASi epsilon amperometric detector
- Pulsed Amperometric Detection
- Input voltages of 0.10, 1.0, and 10 volts

Analog filter: 0.1, 1, 10, 100, 1000, and 10,000 Hz  
 Offset, Detector Channels W1 and W2: 0 to +/-1mA  
 Offset, Detector Channels W3 and W4: 0 to +/-1uA  
 AutoZero (All the EC Channels): 0-100% full scale

### Input/Output of the Back Panel

External Input Channels: 3 ranges: +/-10V, +/-1V, +/-100mV  
 Autosampler  
 Current Analog Output for W1, W2, W3 & W4 : +/-1V  
 Potential Analog Output -Eout for W1  
 External Input Connector: Ext-1 and Ext-2 (Ext-2 requires W2 Analog board)  
 Control Connector: Start in, Stop in, Start out, Stop out  
 Event Connectors: 4 SPDT relays with NO, NC, and COM Terminals  
 USB Connector to the PC  
 W1 Cell Connector: Standard LEMO Connector for W1 cell – as used with other BASi products  
 W2-4 Cell Connector: LEMO connector (size 2)

### Power

120 or 240 VAC, 50/60 Hz, maximum 240 W

### Dimensions and Weight

16.75" (43 cm) X 5.25" (13 cm) X 12.75" (32.5 cm)  
 1 channel - 20.2 lb. (9.2 kg)

### Minimum PC requirements:

Windows 2000, XP, or Vista  
 Pentium III or higher  
 512 MB RAM  
 20 MB hard drive space available  
 CD-ROM drive  
 USB port

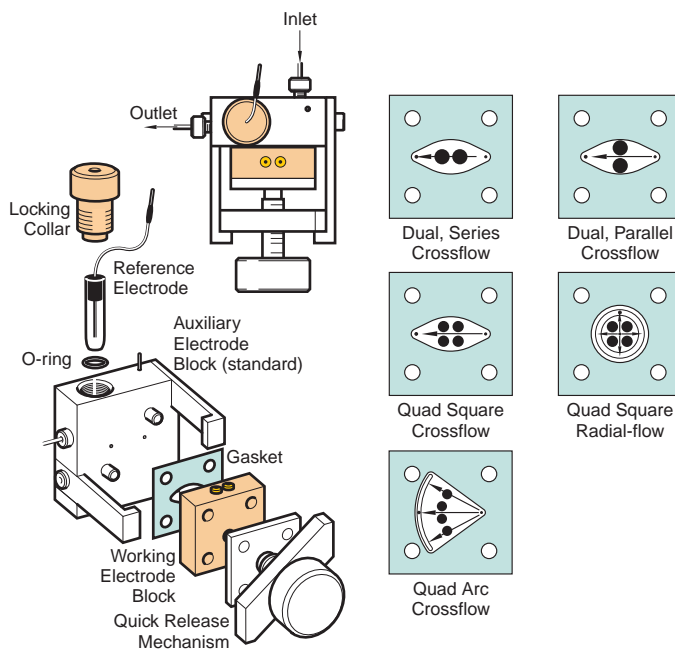
If you purchase the epsilon with a BASi computer, ChromGraph will come pre-loaded and ready to run.

## Accessories Available

### CC-5 Compartment with thin-layer flow cell, injector and column heater



### Flow cell



## Accessories Available

### Column Temperature Control



### Analytical & Microbore Columns



### Working Electrodes



## Ordering Information



Follow this sequence of icons to construct a part number for your detector using one of the options for each below.

<b>E</b>	e5 e5P	epsilon Electrochemical Detector* epsilon Electrochemical Detector w/BASi PC
<b>→</b>	1 2 4	One Amperometric Channel with ChromGraph data reduction and control software Two Amperometric Channels with ChromGraph data reduction and control software Four Amperometric Channels with ChromGraph data reduction and control software
<b>R → O</b>	1 2 3 4 0	CC-5e Cross-flow, Down-stream Reference Cell and Accessories CC-5e Radial-flow, Down-stream Reference Cell and Accessories CC-5e Cross-flow Cell and Accessories CC-5e Array Cell and Accessories No Cell Options
<b>🔍</b>	1 3 0	Standard 7125 Injector for CC-5e UniJet Microbore Injector for CC-5e No Injection Valve
<b>🌡️</b>	1 0	Column Temperature Control No Temperature Control
<b>🌿</b>	1 2 7	PEEK, 3 µm ODS, 3.0 x 100 mm column, 1/pk PEEK, 3 µm ODS, 2.0 x 100 mm column, 1/pk UniJet, 3 µm ODS, 1 x 100 mm column, 3/pk, with UniJet guard columns, 6/pk
<b>■</b>	0	Future Options
* Requires the use of a computer. See specifications for minimum computer requirements.		


**BASi** Corporate Center  
 2701 Kent Avenue  
 West Lafayette, IN 47906 USA  
*Your Scientific Connection*  
 765.463.4527 FAX 765.497.1102  
 www.BASInc.com